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ABSTRACT

The inefficiencies and inequities perceived to be associated with the prevailing terms of access to educational opportunity have provided the primary rationales for public policy initiatives in the area of student financial aid. It can be argued, however, that ostensible social or external benefits occurring from these aid programs constitute an exceptionally weak basis for advocating public support for or involvement in advanced education and training. Equity and efficiency in the schooling process, in labor markets, and in the provision of such public goods as research, do not require governmental intrusion, either fiscal or regulatory, into the terms of access to advanced education and training. Only in response to market failures can a persuasive case be made for governmental action. (Author/MSE)

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# Equity and Efficiency in Access to Advanced Education: A Reconsideration

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Equity and Efficiency in Access to Advanced Education:
A Reconsideration

For at least two decades an important objective in the development of federal higher education policy has been the facilitation of "access" to educational opportunities, especially on the part of persons with very different financial capabilities (family income and wealth). While this emphasis, as reflected, e.g., in the Basic Educational Opportunity Grant and State Student Incentive Grant programs, has been most pronounced in the domain of undergraduate-collegiate and non-collegiate education, access has also constituted an important objective of such graduate/professional programs as the National Defense, National Science Foundation and National Institutes of Health fellowships and traineeships, and capitation grants to health professions schools. Also, general-purpose government-sponsored loan programs (direct and guaranteed) have provided an important source of funds for graduate and professional students, as well as for their primary target population of undergraduates, and have been augmented by special-purpose loan program for students in the health professions (medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, pharmacy and nursing).

The inefficiencies and inequities perceived to be associated with prevailing terms of access to educational opportunities have provided the primary rationales for these public policy initiatives. Inefficiencies of two distinct types have been claimed as justifications for federal action. First, social or external benefits

are asserted to flow from at least certain types of educational investments: Social benefits of a diffuse nature may derive from a more highly-educated population; specific social benefits, related, e.g., to public health or to the rate of economic growth, may derive from certain activities of persons with particular types of education or training; joint or secondary products, e.g., research, may be associated with the educational process itself; and educational policies and programs may provide mechanisms for achieving other social objectives, e.g., extension of medical care or legal services to underserved areas or populations. Social or external benefits of these types give rise to inefficiency because they represent benefits which are not entirely captured by the individual deciding on the type and level of investment in education which he should undertake. As a result, individual decisions, based on perceived private benefits, can be expected to result in underinvestment from a social perspective. Considerations of this sort have provided the justification for general or targeted subsidies to at least some components (students and/or institutions) of the higher-cum-professional education system. The central objective in this domain has been to achieve a change in the terms of access (prices, criteria for entry) facing all students considering a more-or-less broadly-defined spectrum of educational options. The fundamental concern is with the aggregate flow of persons into, through and out of the educational establishment or its component parts, not with the identities of these persons.

It can be strongly argued, however, that ostensible social or external benefits constitute an exceptionally weak basis for

advocating public support of or involvement in advanced education and training. Virtually every specific example advanced by partisans of this view involves either (a) a particular postschooling employment or activity of the highly educated individual or (b) an asserted joint product relationship. In the first case, whether the social benefit consists of the flow of returns to research or of the provision of particular services to target, purportedly underserved groups, to attempt to secure the benefit through support of education is to rely on a mechanism which is itself highly inefficient on at least two counts. First, much of the benefit will be diffused to nonpreferred activities and uses. Second, all users, preferred and nonpreferred, will perceive highly trained personnel to be less valuable than they in fact are; paying only a fraction of the price (wage) which would be observed were education unsubsidized, all users will have an incentive to substitute more for less highly qualified personnel, when the total provision of services could be expanded with lesser real resource costs (including the resources devoted to education and training) were training unsubsidized and were some fraction (necessarily less than 100 percent) of the erstwhile educational subsidies devoted to the direct provision (subsidization) of the target services.

Thus, for example, if the objective is to provide medical care to an underserved geographic are, the solution of subsidizing the expansion of medical schools, flooding the market with M.D.s such that their earnings in more desirable locations fall to the point that at least some are willing to enter practice in less desirable locations, must be viewed as a highly inefficient means of seeking

to achieve the objective. The greatest share of the gross benefit accrues to those in glutted areas, who pay lower prices for, and increase their consumption of, physician services. Also, because of the artificially low relative prices attached to their services, physicians are utilized to perform functions which could be more efficiently performed by other, less highly trained and less human-capital-intensive personnel. Given freedom of access to unsubsidized and quantitatively and qualitatively unregulated medical education, the alternative of providing "bounties" for practice in underserved areas (or alternatively, lump-sum taxes on practitioners in overserved areas) will involve significantly lower resource costs necessary to achieve any given increase in services in underserved areas.

Parenthetically, it should be observed that this leaves aside the even more basic issues of (1) whether the ostensible beneficiaries themselves would in fact prefer the subsidized service, medical care, rather than a transfer of equivalent general purchasing power, and (2) whether relative earnings (pecuniary and non-pecuniary) in underserved areas already compensate individuals for the lesser availability of medical (and other) services. If either of these conditions is met, then any subsidization of medical care, even "efficient" subsidies which minimize the social costs of providing any level of services, will be either inefficient (from the vantage point of the consumers of the subsidized service who would prefer other goods and services) and/or inequitable (from the vantage point of those in better served areas who (a) accept lower earnings, ceteris paribus, in order to have greater access

to medical care, and (b) contribute to the financing of subsidies to the provision of services in "underserved" areas).

The joint product argument for support of advanced education and training is, if possible, even weaker than the post-schooling employment arguments. This argument rests on the wool-mutton analogy and effectively asserts that advanced research (or some comparable social good) is akin to a sheep, sprouting forth wooly Ph.D.s (or vice versa). However, this argument has virtually no practical relevance, i.e., relevance to decisions regarding the greater or lesser provision of any service, because at the margin there are, in fact, probably no truly joint products, two products so related in production that to obtain more of one requires accepting proportionately more of the other as well. At the margin, all products are substitutes.

It is certainly true that an exapnsion of advanced education is likely to encourage research and knowledge production. However, this alone can hardly be taken as a justification for the expansion of the educational enterprise. A given increase in research activity can clearly be achieved directly at a lesser real resource cost. Research and education may indeed be interdependent in production, i.e., an increase in the scale of either may reduce the relative cost of an increment of activity in the other, but the relationship can hardly be characterized as strict and unavoidable complimentarity. Thus, again, direct subsidization of the target activity, research, permitting the educational enterprise to find its own appropriate scale and relationship to research, is required if resources (for both education and research) are to be efficiently allocated..

A related efficiency argument asserts that greater social or

external benefits accrue to the attraction of more able, higher quality personnel to such activities as, e.g., scientific research or medical care. Again, however, the fundamental issue is one of outputs, not of inputs. If social benefits attach to research, and if the more able make relatively greater contributions to research output, then with appropriate subsidies to research the relative earnings of the more able should reflect their relatively greater productivity, leading appropriate numbers of the highly able to enter research. To further subsidize the supply of highly able researchers will imply a counter-inefficiency: The earnings of the more able will underrepresent their true relative costs to society, and they will be substituted for the less able to an economically unjustifiable extent. In short, relative wages, without further incentives through subsidized education and training, will lead to the most efficient distribution of the highly able across alternative sectors and activities.

A second, very different efficiency issue, which provides the primary focus of this discussion, derives from what are commonly characterized as market failures. The problem here is not that education gives rise to benefits which are not perceived (captured) by the individual, and hence that individuals purposefully underinvest in education, but rather than individuals face constraints which unnecessarily preclude educational investments which they would choose to make under more ideal circumstances. A panoply of market failures which might give rise to inefficiency in the level and/or composition of educational (or, more generally, human capital) investments can be suggested: monopoly or collusive oligopoly on

the part of suppliers of educational services, barriers to and/or arbitrary prerequisites for entry into various occupations imposed by similarly collusive and monopolistic professional associations and unions, capital market imperfections which deny individuals access to means of financing educational investments on terms comparable to those on which other investments can be financed, and "insurance market" failures which preclude appropriate shifting and/or pooling of the risks of educational investments. Each of these can reasonably be expected in fact to constitute a significant source of inefficiency, resulting in a misallocation of resources to and within education.

In addition to distortions in the allocation of resources to education, these sources of inefficiency are commonly perceived as inequitable in their consequences for individuals. This is especially true of the first two noted above, involving arbitrary restrictions on access either to education and training or to postschooling opportunities for employment. These necessarily involve the rationing of opportunities, and whether that rationing is implemented on the basis of a random draw, of parental contacts, occupation or social standing, or of race or sex, the result is inevitably to discriminate against the excluded relative to the included. Thus, it can be argued that the rejected applicant to a medical or law school (not to mention the person who never applied) has been inequitably treated, not by those admitted, on whatever basis, but by a system which highly subsidizes opportunities for education and later economic rewards, while simultaneously limiting the supply of educational opportunities below that for which the artificially low prices create a demand, thus insuring the maintenance of monopoly rents to the fortunate

few ultimately admitted.

Capital and insurance market failures can also be expected to impinge differentially, and inequitably on different individuals. Persons with greater wealth (command over resources) find their educational opportunities less severely constrained than those with lesser wealth. Note, however, that inequity is not necessarily implied by the fact persons with lesser wealth acquire less education than those with greater wealth. On the contrary, if education represented a pure consumption good, and if those with lesser income and wealth chose to consume less education than those with greater income and wealth, just as they choose to consume less housing, less expensive food, etc., then differential access to (consumption of) education would constitute no greater an inequity than differential access to any other source of satisfaction. Thus, the issue of equity with respect to access to education, as distinct from access to income and wealth generally, can arise only if education is inefficiently provided, i.e., if market failures more severely constrain the opportunities of those with lesser income and wealth. Otherwise, the essential issue is one of equity in the distribution of income and wealth, not of equity in access to education. It then follows that observed differences in educational attainments across, e.g., family income groups provide an index of inequity only to the degree to which these are a result of market failure. Thus, what appears to be an "equity and efficiency" problem can be viewed, ultimately in purely efficiency terms: Because of market failures, e.g., inadequate access to capital markets, individuals, especially those with lesser income and wealth, invest less in human capital then would otherwise

be the case. Equity considerations, then, can arise only as a by-product of more fundamental inefficiencies which impinge differentially upon individuals enjoying different financial capabilities.

Capital market failures can, in general, be expected to result in lesser educational investment than would be observed if access to capital markets could be provided on a nondiscriminatory basis vis-a-vis other types of investment. Clearly, however, the consequences of capital market imperfection will necessarily be less serious for the wealthy than for the poor. Would-be students from high income-wealth families enjoy read access to funds for educational investment, within the family, at implicit interest rates comparable to those which would be incurred in the financing of other types of investment. Even if high income families hold their wealth in relatively illiquid forms, e.g., owner-occupied housing, it is still possible for a family to finance the education of its offspring by using such illiquid assets as collateral for a loan; this choice simply represents a portfolio decision on the part of the family unit.

In contrast, apart from governmentally-sponsored loan programs which themselves incorporate substantial subsidies and thus necessitate discriminatory rationing, potential students from low income-wealth families face virtually nonexistent capital market opportunities. The student without direct or indirect claim on other assets can offer only his future earnings as security to a lendor. However, although education, especially at the graduate and professional levels, represents primarily an investment by the individual in human capital which will give rise to a flow of future earnings,

constitutional strictures against involuntary servitude, and associated bankruptcy laws, render this asset effectively valueless as collateral. As a result, capital market access is either foreclosed or is available only on terms which are so unfavorable, with respect to the cost of funds, terms of repayment, etc., as to render an otherwise attractive educational investment economically undesirable.

Insurance market failures appear to be substantially more general (less discriminatory) in their consequences for individual investment behavior. The risks associated with investments in education are incontrovertibly high. Even controlling for such factors as family background and ability, the variance of the returns to education is generally greater than that of other assets. Furthermore, available evidence suggests that the variance in returns rises monotonically with the level of educational attainment.

The impact of the inherent risks associated with alternative assets on decisions regarding the level and composition of investment will depend, of course, on the individual investor's attitudes toward risk. The more risk averse he is, the less he will be willing to undertake high risk investment; only a risk neutral individual will ignore risk and base his investment decisions entirely on mean expected returns. Thus, unless potential human capital investors are risk neutral (or, a less likely possibility, are risk seeking, i.e., positively value higher risk and are willing to sacrifice expected returns for greater variance), the failure of the insurance market to provide mechanisms for the shifting or pooling of

the insurable risks associated with human capital investment, and hence for reducing the risks ultimately borne by the individual, will lead to underinvestment in education.

Of course, some risks, e.g., the risk of flood for those occupying a flood plain, are by their very nature uninsurable, simply because, should the contingency occur, it befalls everyone who might wish to insure against it. In these cases the lesser investment undertaken by risk averse individuals cannot be characterized a priori as suboptimal, although there may be circumstances in which society would find it desirable to indemnify individuals against an uninsurable risk. In the more general case, in which risks are of an insurable nature, the failure of the insurance market to provide protection to individuals will result in suboptimal rates of investment.

Again, interpersonal differences in degrees of risk aversion (unwillingness to bear risk) will imply differential consequences of insurance market failure. Underinvestment (and hence loss of welfare) will be concentrated among those who are most risk averse, while the welfare of the risk neutral will be unaffected. And, it is certainly possible that these differences in attitudes toward risk are related to family income and wealth, giving rise to a systematic and socially pernicious inequity. However, as in the case of capital market failure, the fundamental issue is one of inefficiency. Providing for the more efficient functioning of insurance markets will simultaneously contribute to the rectification of any related, secondary social inequities resulting from differential risk aversion.

Ultimately perhaps even more serious than the associated equity

consequences, insurance market failures may have critical implications for the characteristics of persons entering occupations requiring major investments in high levels of education and training. The unavailability of insurance against risk may lead to an important, systematic bias in these characteristics, as those who are risk averse are deterred and as a result the risk-neutral and risk-seeking become predominant in the ranks of professional practioners. Furthermore, this tendency may be selfreinforcing, as established members of these occupations, themselves systematically selected, exert control over the highly rationed entry of new members, explicitly or implicitly imposing corresponding attitudes toward risk as a prerequisite for admission, with further reinforcement of these attitudes in the course of education and training. How and to what extent this process of systematic selection and selfselection, leading to greater prevalence of risk-seeking attitudes, will alter the quality and character of services and standards and patterns of conduct and behavior in the professions is an issue beyond the scope of this discussion. However, it appears selfevident that these effects may be quite pronounced, fundamentally influencing the nature and qualitative character of performance in such socially sensitive and pivotal occupations as medicine and law. Thus, improvement of insurance market performance may lead not only to more optimal levels of educational investment but also to pronounced changes in the qualitative character of the services provided by the highly educated, and this effect offers perhaps the strongest incentive for correcting insurance market failure.

The suboptimal level and composition of investment in human

capital which can be expected to result from inadequate access to capital and insurance markets could be rectified, in principle, via educational subsidies, related to family income and wealth and to other individual characteristics leading to differential consequences of market failure. However, recourse to subsidies may introduce other, equally pernicious inequities and inefficiencies. Need-based grants to students represent both artificial reductions in the cost of education as perceived by the recipient, and also selective wealth transfers, differentially benefitting those who acquire education relative to those who do not. It is the former characteristic, of course, by which subsidies effectively compensate for the adverse efficiency consequences of capital and insurance market failures. However, unless the subsidizing authority is sufficiently astute to provide grants which are just sufficient to compensate for the investment-depressing consequences of market failure, recipients may be led to invest in education even though its expected rate of return is less than that which could be achieved through alternative uses of funds; if market failures were directly rectified and the subsidies (or subsidy-restrictions) were removed, the subsidy-recipient would choose to reduce his educational outlays. Under these circumstances the restriction of the subsidy will lead to overinvestment in education. And because only the private rate of return to education is relevant in the case of capital and insurance market failure, there is in this instance no justifiable basis for favoring the greater educational investment.

Even if subsidies were just sufficient to compensate for market failures and hence did not give rise to aggregate overinvestment in

education, these subsidies would still represent discriminatory wealth transfers to beneficiaries (students) relative to nonbeneficiaries (non-students). This constitutes an inequity which is simultaneously quasi-horizontal (different persons from families with identical income and wealth, and also different persons with identical lifetime incomes although from families with different income and and wealth, receive different benefits) and quasi-vertical (of two persons, whether from identical or from different family income-wealth backgrounds, the one who becomes more highly educated, and because of family income receives the benefit, will, on average, experience higher earnings over his lifetime). This inequity is only compounded by the fact that individuals from families with the same (or with very different) income and wealth may not receive comparable (or comparably different) "inheritances," or even temporary access to capital, from their families; that is, contrary to the assumption underlying need-based grants, differences in family income and wealth may not provide a very accurate index of differences in resources available to students, differences for which grants are designed to compensate.

Thus, it would appear that considerations of income and wealth distribution should, to the degree possible, be divorced from educational policy considerations, and specifically, that efficiency issues involving "access to education" should not be confused with the fundamental social-equity issues involving "access to wealth." And in fact, it is unnecessary to compensate for market imperfections via grants, more generalized educational subsidies, and the rationing of educational opportunities if devices for improving these markets can

be devised.

As a general conclusion, it can be argued that equity and efficiency, in the schooling (human capital formation) process, in labor markets and related final output markets, and in the provision of such public goods as research, do not require governmental intrusion, either fiscal or regulatory, into the terms of access to advanced education and training. Only in response to market failures can a persuasive case be made for governmental action.

In the case of monopoly or collusive oligopoly on the part of educational suppliers, professional associations and unions, two courses of action can be argued to be appropriate: First, public policy support for and reinforment of private collusion, especially through the regulatory process, can be terminated. Second, the application of anti-trust laws can be extended to encompass these loci of market power.

With reference to capital and insurance market failures, the threat to truly effective government action is that initiatives to correct these market imperfections may be encumbered, and fundamentally vitiated, by the inclusion of features intended to achieve other, separable, social objectives. Thus, action in these realms should be clearly focussed on the central objectives of (a) providing access to capital for purposes of human capital investment on terms which are nondiscriminatory relative to those terms on which capital can be acquired for any other investment, and (b) making it possible for individuals to insure against those truly insurable risks associated with human capital investments. Various mechanisms for achieving these objectives can be

suggested, including, e.g., the permanent establishment of publicly sponsored programs and institutions, of temporary public programs and institutions designed to spur private emulation and further development, or simply of enactment of those statutory and Constitutional changes which would be required if private action were to become feasible. The choice among these alternatives must, ultimately, be decided in terms of the degree to which each course of action most effectively contributes to the perfection of capital and insurance market access.

Only by responding in a perceptive and significant manner to these sources of market failure can freedom of access to the full spectrum of life opportunities be provided to all and can social welfare truly be enhanced.